



SEQUENCE LISTING



<110> Taupier, Raymond
Padigaru, Muralidhara
Rastelli, Luca
Spaderna, Steven
Shimkets, Richard
Zerhusen, Bryan
Spytek, Kimberly
Shenoy, Suresh
Li, Li
Gusev, Vladimir
Grosse, William
Alsobrook, John
Lepley, Denise
Burgess, Catherine
Gerlach, Valerie
Ellerman, Karen
MacDougall, John
Stone, David
Smithson, Glennda

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 <212> PRT
 <213> Homo sapiens

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 Glu Leu Asp Gly Val Gly Val Ser Ile Gly Ser Ala Ile His Thr Gln
 225 230 235 240
 Leu Arg Ser Ser Val Tyr Pro Leu Leu Ala Ala Val Gly Ser Leu Gly
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gacacggcag ggaccatcac aggtcccata gtcctttgct ccaaaaaaaaa tag 2153

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<210> 12
 <211> 717
 <212> PRT
 <213> Homo sapiens

<400> 12
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 1 5 10 15
 Leu Leu Val Ala Leu Glu Cys Ser Glu Ala Ser Ser Asp Leu Asn Glu
 20 25 30
 Ser Ala Asn Ser Thr Ala Gln Tyr Ala Ser Asn Ala Trp Phe Ala Ala
 35 40 45
 Ala Ser Ser Glu Pro Glu Glu Gly Ile Ser Val Phe Glu Leu Asp Tyr
 50 55 60
 Asp Tyr Val Gln Ile Pro Tyr Glu Val Thr Leu Trp Ile Leu Leu Ala
 65 70 75 80
 Ser Leu Ala Lys Ile Gly Phe His Leu Tyr His Arg Leu Pro Gly Leu
 85 90 95
 Met Pro Glu Ser Cys Leu Leu Ile Leu Val Gly Ala Leu Val Gly Gly
 100 105 110
 Ile Ile Phe Gly Thr Asp His Lys Ser Pro Pro Val Met Asp Ser Ser
 115 120 125
 Ile Tyr Phe Leu Tyr Leu Leu Pro Pro Ile Val Leu Glu Gly Gly Tyr
 130 135 140
 Phe Met Pro Thr Arg Pro Phe Phe Glu Asn Ile Gly Ser Ile Leu Trp

145	150	155	160
Trp Ala Val Leu Gly 165	Ala Leu Ile Asn 170	Ala Leu Gly Ile Gly 175	Leu Ser
Leu Tyr Leu Ile Cys 180	Gln Val Lys Ala 185	Phe Gly Leu Gly Asp 190	Val Asn
Leu Leu Gln Asn Leu 195	Leu Phe Gly Ser 200	Leu Ile Ser Ala 205	Val Asp Pro
Val Ala Val Leu Ala 210	Val Phe Glu Glu Ala 215	Arg Val Asn Glu Gln 220	Leu
Tyr Met Met Ile Phe 225	Gly Glu Ala Leu Leu 230	Asn Asp Gly Ile Thr 235	Val 240
Val Leu Tyr Asn Met 245	Leu Ile Ala Phe Thr 250	Lys Met His Lys Phe 255	Glu
Asp Ile Glu Thr Val 260	Asp Ile Leu Ala Gly 265	Cys Ala Arg Phe Ile 270	Val
Val Gly Leu Gly Gly 275	Val Leu Phe Gly Ile 280	Val Phe Gly Phe Ile 285	Ser
Ala Phe Ile Thr Arg 290	Phe Thr Gln Asn Ile 295	Ser Ala Ile Glu Pro 300	Leu
Ile Val Phe Met Phe 305	Ser Tyr Leu Ser Tyr 310	Leu Ala Ala Glu Thr 315	Leu 320
Tyr Leu Ser Gly Ile 325	Leu Ala Ile Thr Ala 330	Cys Ala Val Thr Met 335	Lys
Lys Tyr Val Glu Glu 340	Asn Val Ser Gln Thr 345	Ser Tyr Thr Thr Ile 350	Lys
Tyr Phe Met Lys Met 355	Leu Ser Ser Val Ser 360	Glu Thr Leu Ile Phe 365	Ile
Phe Met Gly Val Ser 370	Thr Val Gly Lys Asn 375	His Glu Trp Asn Trp 380	Ala
Phe Ile Cys Phe Thr 385	Leu Ala Phe Cys Gln 390	Ile Trp Arg Ala Ile 395	Ser 400
Val Phe Ala Leu Phe 405	Tyr Ile Ser Asn Gln 410	Phe Arg Thr Phe Pro 415	Phe
Ser Ile Lys Asp Gln 420	Cys Ile Ile Phe Tyr 425	Ser Gly Val Arg Gly 430	Ala
Gly Ser Phe Ser Leu 435	Ala Phe Leu Leu Pro 440	Leu Ser Leu Phe Pro 445	Arg
Lys Lys Met Phe Val 450	Thr Ala Thr Leu Val 455	Val Ile Tyr Phe Thr 460	Val
Phe Ile Gln Gly Ile 465	Thr Val Gly Pro Leu 470	Val Arg Tyr Leu Asp 475	Val 480
Lys Lys Thr Asn Lys 485	Lys Glu Ser Ile Asn 490	Glu Glu Leu His Ile 495	Arg

Leu Met Asp His Leu Lys Ala Gly Ile Glu Asp Val Cys Gly His Trp
 500 505 510
 Ser His Tyr Gln Val Arg Asp Lys Phe Lys Lys Phe Asp His Arg Tyr
 515 520 525
 Leu Arg Lys Ile Leu Ile Arg Lys Asn Leu Pro Lys Ser Ser Ile Val
 530 535 540
 Ser Leu Tyr Lys Lys Leu Glu Met Lys Gln Ala Ile Glu Met Val Glu
 545 550 555 560
 Thr Gly Ile Leu Ser Ser Thr Ala Phe Ser Ile Pro His Gln Ala Gln
 565 570 575
 Arg Ile Gln Gly Ile Lys Arg Leu Ser Pro Glu Asp Val Glu Ser Ile
 580 585 590
 Arg Asp Ile Leu Thr Ser Asn Met Tyr Gln Val Arg Gln Arg Thr Leu
 595 600 605
 Ser Tyr Asn Lys Tyr Asn Leu Lys Pro Gln Thr Ser Glu Lys Gln Ala
 610 615 620
 Lys Glu Ile Leu Ile Arg Arg Gln Asn Thr Leu Arg Glu Ser Met Arg
 625 630 635 640
 Lys Gly His Ser Leu Pro Trp Gly Lys Pro Ala Gly Thr Lys Asn Ile
 645 650 655
 Arg Tyr Leu Ser Tyr Pro Tyr Gly Asn Pro Gln Ser Ala Gly Arg Asp
 660 665 670
 Thr Arg Ala Ala Gly Phe Ser Gly Lys Leu Pro Thr Trp Leu Leu Leu
 675 680 685
 Trp Leu Arg Phe Gly Arg Gly Gly Gln Leu Thr Met Asp Thr Ala Gly
 690 695 700
 Thr Ile Thr Gly Pro Ile Val Leu Cys Ser Lys Lys Asn
 705 710 715

<210> 13
 <211> 251
 <212> DNA
 <213> Homo sapiens

<400> 13
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 gagataaatc caccgccttc aagagaaaaca aacgaaagaa gcaaacagggt gaattataat 180
 gagctgtgag ctgcgaatag gtactgcaca ttccatgggc attgccttct tattttactt 240
 cttttagctg t 251

<210> 14
 <211> 46
 <212> PRT
 <213> Homo sapiens

<400> 14
 Met Ser Asp Lys Pro Ser Met Ala Glu Ile Glu Thr Leu Asn Lys Gln

1 5 10 15
 Arg Leu Lys Lys Ala Glu Thr Gln Glu Ile Asn Pro Pro Pro Ser Arg
 20 25 30

Glu Thr Asn Glu Arg Ser Lys Gln Val Asn Tyr Asn Glu Leu
 35 40 45

<210> 15
 <211> 2144
 <212> DNA
 <213> Homo sapiens

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 gttagctgtc acagaaggcg attgatcgcc atcccagagg gcattcccat cgaaaccaa 180
 atcttgggacc tcagtaaaaa caggctaaaa agcgtcaacc ctgaagaatt catatcatat 240
 cctctgctgg aagagataga cttgagtgac aacatcattg ccaatgtgga accaggagca 300
 ttcaacaatc tctttaacct gcgttccctc cgcctaaaag gcaatcgtct aaagctgggc 360
 cctttgggag tattcacggg gctgtccaat ctactaagc ttgacattag tgagaataag 420
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 ggggacaatg atttggttta tatatcacac agggcattca gtgggcttct tagcttggag 540
 cagctcaccc tggagaaatg caacttaaca gcagtaccaa cagaagccct ctcccacctc 600
 cgcagcctca tcagcctgca tctgaagcat ctcaatatca acaatatgcc tgtgtatgcc 660
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 atgcctgcca atagcctcta cgggtctcaac ctacatccc tttcagtcac caacaccaat 780
 ctgtctactg tacccttctt tgcctttaa cacctgggtat acctgactca ccttaacctc 840
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 cgcttcctac gcgtgtctca tgtgtctcag aacctgctgg aaactttgga agagaatgtc 1020
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 ctagtagatg aagggcagac agtccagcta gaatgcagtg cagatggaga cccgcagcct 1320
 gtgatttcct ggggtgacac ccgaaggcgt ttcatacca ccaagtcca tggagagacc 1380
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 tatgtttgca tcgctagcaa tgcgtgctgg aatgatacct tcacagcctc cttaactgtg 1500
 aaaggattcg cttcagatcg ttttctttat gccaacagga cccctatgta catgaccgac 1560
 tccaatgaca ccatttccaa tggcagcaat gccaatactt ttccctgga ccttaaaaca 1620
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 cttctccttt ttgtgtggag ccgagggaaa ggcaagcaca aaaacagcat tgaccttgag 1740
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 gtaatcagta agacagtatg gcacagtaaa ttactagatt aagaggcagc catgtgcagc 1920
 tgccctgta tcaaaagcag ggtctatgga agcaggagga cttccaatgg agactctcca 1980
 tcgaaaggca ggcaggcagg catgtgtcag agcccttcac acagtgggat actaagtgtt 2040
 tgcgttgcaa atattggcgt tctggggatc tcagtaatga acctgaatat ttggctcaca 2100
 ctcacggaca attattcagc attttctacc actgcaaaaa aaaa 2144

<210> 16
 <211> 606
 <212> PRT
 <213> Homo sapiens

<400> 16
 Met Leu His Thr Ala Ile Ser Cys Trp Gln Pro Phe Leu Gly Leu Ala
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Val Val Leu Ile Phe Met Gly Ser Thr Ile Gly Cys Pro Ala Arg Cys
 20 25 30

Glu Cys Ser Ala Gln Asn Lys Ser Val Ser Cys His Arg Arg Arg Leu
 35 40 45
 Ile Ala Ile Pro Glu Gly Ile Pro Ile Glu Thr Lys Ile Leu Asp Leu
 50 55 60
 Ser Lys Asn Arg Leu Lys Ser Val Asn Pro Glu Glu Phe Ile Ser Tyr
 65 70 75 80
 Pro Leu Leu Glu Glu Ile Asp Leu Ser Asp Asn Ile Ile Ala Asn Val
 85 90 95
 Glu Pro Gly Ala Phe Asn Asn Leu Phe Asn Leu Arg Ser Leu Arg Leu
 100 105 110
 Lys Gly Asn Arg Leu Lys Leu Val Pro Leu Gly Val Phe Thr Gly Leu
 115 120 125
 Ser Asn Leu Thr Lys Leu Asp Ile Ser Glu Asn Lys Ile Val Ile Leu
 130 135 140
 Leu Asp Tyr Met Phe Gln Asp Leu His Asn Leu Lys Ser Leu Glu Val
 145 150 155 160
 Gly Asp Asn Asp Leu Val Tyr Ile Ser His Arg Ala Phe Ser Gly Leu
 165 170 175
 Leu Ser Leu Glu Gln Leu Thr Leu Glu Lys Cys Asn Leu Thr Ala Val
 180 185 190
 Pro Thr Glu Ala Leu Ser His Leu Arg Ser Leu Ile Ser Leu His Leu
 195 200 205
 Lys His Leu Asn Ile Asn Asn Met Pro Val Tyr Ala Phe Lys Arg Leu
 210 215 220
 Phe His Leu Lys His Leu Glu Ile Asp Tyr Trp Pro Leu Leu Asp Met
 225 230 235 240
 Met Pro Ala Asn Ser Leu Tyr Gly Leu Asn Leu Thr Ser Leu Ser Val
 245 250 255
 Thr Asn Thr Asn Leu Ser Thr Val Pro Phe Leu Ala Phe Lys His Leu
 260 265 270
 Val Tyr Leu Thr His Leu Asn Leu Ser Tyr Asn Pro Ile Ser Thr Ile
 275 280 285
 Glu Ala Gly Met Phe Ser Asp Leu Ile Arg Leu Gln Glu Leu His Ile
 290 295 300
 Val Gly Ala Gln Leu Arg Thr Ile Glu Pro His Ser Phe Gln Gly Leu
 305 310 315 320
 Arg Phe Leu Arg Val Leu Asn Val Ser Gln Asn Leu Leu Glu Thr Leu
 325 330 335
 Glu Glu Asn Val Phe Ser Ser Pro Arg Ala Leu Glu Val Leu Ser Ile
 340 345 350
 Asn Asn Asn Pro Leu Ala Cys Asp Cys Arg Leu Leu Trp Ile Leu Gln
 355 360 365

Arg Gln Pro Thr Leu Gln Phe Gly Gly Gln Gln Pro Met Cys Ala Gly
 370 375 380
 Pro Asp Thr Ile Arg Glu Arg Ser Phe Lys Asp Phe His Ser Thr Ala
 385 390 395 400
 Leu Ser Phe Tyr Phe Thr Cys Lys Lys Pro Lys Ile Arg Glu Lys Lys
 405 410 415
 Leu Gln His Leu Leu Val Asp Glu Gly Gln Thr Val Gln Leu Glu Cys
 420 425 430
 Ser Ala Asp Gly Asp Pro Gln Pro Val Ile Ser Trp Val Thr Pro Arg
 435 440 445
 Arg Arg Phe Ile Thr Thr Lys Ser Asn Gly Arg Ala Thr Val Leu Gly
 450 455 460
 Asp Gly Thr Leu Glu Ile Arg Phe Ala Gln Asp Gln Asp Ser Gly Met
 465 470 475 480
 Tyr Val Cys Ile Ala Ser Asn Ala Ala Gly Asn Asp Thr Phe Thr Ala
 485 490 495
 Ser Leu Thr Val Lys Gly Phe Ala Ser Asp Arg Phe Leu Tyr Ala Asn
 500 505 510
 Arg Thr Pro Met Tyr Met Thr Asp Ser Asn Asp Thr Ile Ser Asn Gly
 515 520 525
 Ser Asn Ala Asn Thr Phe Ser Leu Asp Leu Lys Thr Ile Leu Val Ser
 530 535 540
 Thr Ala Met Gly Cys Phe Thr Phe Leu Gly Val Val Leu Phe Cys Phe
 545 550 555 560
 Leu Leu Leu Phe Val Trp Ser Arg Gly Lys Gly Lys His Lys Asn Ser
 565 570 575
 Ile Asp Leu Glu Tyr Val Pro Lys Lys Asn His Gly Ala Val Val Glu
 580 585 590
 Gly Glu Val Ala Gly Pro Arg Arg Phe Asn Met Lys Met Ile
 595 600 605

<210> 17
 <211> 2187
 <212> DNA
 <213> Homo sapiens

<400> 17
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 gggctctggct gtgggtgttaa tcttcatggg acccaccatt ggctgccccg ctcgctgtga 180
 gtgctctgcc cagaacaaat ctgttagctg tcacagaagg cgattgatcg ccatcccaga 240
 gggcattccc atcgaaacca aaatcttgaa cctcagtaaa aacaggctaa aaagcgtcaa 300
 ccctgaagaa ttcatatcat atcctctgct ggaagagata gacttgagtg acaacatcat 360
 tgccaatgtg gaaccaggag cattcaacaa tctctttaac ctgcgttccc tccgcctaaa 420
 aggcaatcgt ctaaagctgg tccctttggg agtattcacg gggctgtcca atctcactaa 480
 gcttgacatt agtgagaata agattgtcat ttactagac tacatgttcc aagatctaca 540
 taacctgaag tctctagaag tgggggacaa tgatttggtt tatatatcac acagggcatt 600
 cagtgggctt cttagcttgg agcagctcac cctggagaaa tgcaacttaa cagcagtacc 660
 aacagaagcc ctctcccacc tccgcagcct catcagcctg catctgaagc atctcaatat 720

caacaatatg cctgtgtata cctttaaaag attgttccac ctgaaacacc tagagattga 780
 ctattggcct ttactggata tgatgcctgc caatagcctc tacgggtctca acctcacacc 840
 cctttcagtc accaacacca atctgtctac tgtacccttc cttgccttta aacacctggt 900
 atacctgact caccttaacc tctcctacaa tcccatcagc actattgaag caggcatggt 960
 ctctgacctg atccgccttc aggagcttca tatagtgggg gccagcttc gcaccattga 1020
 gcctcactcc ttccaagggc tccgcttcc acgcgtgctc aatgtgtctc agaacctgct 1080
 ggaaactttg gaagagaatg tcttctcctc ccctagggct ctggaggtct tgagcattaa 1140
 caacaaccct ctggcctgtg actgccgcct tctctggatc ttgcagcgac agcccaccct 1200
 gcagtttggg ggccagcaac ctatgtgtgc tggcccagac accatccgtg agaggctctt 1260
 caaggatttc catagcactg ccctttcttt ttactttacc tgcaaaaaac ccaaaatccg 1320
 tgaaaagaag ttgcagcatc tgctagtaga tgaagggcag acagtccagc tagaatgcag 1380
 tgcagatgga gaccgcagc ctgtgatttc ctgggtgaca cccgaaggc gtttcatcac 1440
 caccaagtcc aatggaagag ccaccgtgtt ggggtgatgg accttggaaa tccgctttgc 1500
 ccaggatcaa gacagcggga tgtatgtttg catcgctagc aatgctgctg ggaatgatac 1560
 cttcacagcc tccttaactg tgaaaggatt cgcttcagat cgttttcttt atgcgaacag 1620
 gacccctatg tacatgaccg actccaatga caccatttcc aatggcacca atgccaatac 1680
 tttttccctg gaccttaaaa caatactggt gtctacagct atgggctgct tcacattcct 1740
 gggagtgggt ttattttggt ttcttctcct tttgtgtgg agccgaggga aaggcaagca 1800
 caaaaacagc attgaccttg agtatgtgcc cagaaaaaac agtgggtgctg ttgtggaagg 1860
 ggaggtagct ggaccagga ggttcaacat gaaaatgatt tgaaggccca cccctcacat 1920
 tactgtctct ttgtcaatgt gggtaatcag taagacagta tggcacagta aattactaga 1980
 ttaagaggca gccatgtgca gctgccctg tatcaaaagc agggctctatg gaagcaggag 2040
 gacttccaat ggagactctc catcgaaagg caggcaggca ggcattgtgtc agagcccttc 2100
 acacagtggg atactaagtg tttgcgttgc aaatattggc gttctgggga tctcagtaat 2160
 gaacctgaat atttggctca cactcac 2187

<210> 18
 <211> 606
 <212> PRT
 <213> Homo sapiens

<400> 18
 Met Leu His Thr Ala Ile Ser Cys Trp Gln Pro Phe Leu Gly Leu Ala
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 Val Val Leu Ile Phe Met Gly Pro Thr Ile Gly Cys Pro Ala Arg Cys
 20 25 30
 Glu Cys Ser Ala Gln Asn Lys Ser Val Ser Cys His Arg Arg Arg Leu
 35 40 45
 Ile Ala Ile Pro Glu Gly Ile Pro Ile Glu Thr Lys Ile Leu Asn Leu
 50 55 60
 Ser Lys Asn Arg Leu Lys Ser Val Asn Pro Glu Glu Phe Ile Ser Tyr
 65 70 75 80
 Pro Leu Leu Glu Glu Ile Asp Leu Ser Asp Asn Ile Ile Ala Asn Val
 85 90 95
 Glu Pro Gly Ala Phe Asn Asn Leu Phe Asn Leu Arg Ser Leu Arg Leu
 100 105 110
 Lys Gly Asn Arg Leu Lys Leu Val Pro Leu Gly Val Phe Thr Gly Leu
 115 120 125
 Ser Asn Leu Thr Lys Leu Asp Ile Ser Glu Asn Lys Ile Val Ile Leu
 130 135 140
 Leu Asp Tyr Met Phe Gln Asp Leu His Asn Leu Lys Ser Leu Glu Val
 145 150 155 160
 Gly Asp Asn Asp Leu Val Tyr Ile Ser His Arg Ala Phe Ser Gly Leu

165										170					175				
Leu	Ser	Leu	Glu	Gln	Leu	Thr	Leu	Glu	Lys	Cys	Asn	Leu	Thr	Ala	Val				
			180					185					190						
Pro	Thr	Glu	Ala	Leu	Ser	His	Leu	Arg	Ser	Leu	Ile	Ser	Leu	His	Leu				
		195					200					205							
Lys	His	Leu	Asn	Ile	Asn	Asn	Met	Pro	Val	Tyr	Thr	Phe	Lys	Arg	Leu				
	210					215					220								
Phe	His	Leu	Lys	His	Leu	Glu	Ile	Asp	Tyr	Trp	Pro	Leu	Leu	Asp	Met				
225					230					235					240				
Met	Pro	Ala	Asn	Ser	Leu	Tyr	Gly	Leu	Asn	Leu	Thr	Pro	Leu	Ser	Val				
				245					250					255					
Thr	Asn	Thr	Asn	Leu	Ser	Thr	Val	Pro	Phe	Leu	Ala	Phe	Lys	His	Leu				
			260					265					270						
Val	Tyr	Leu	Thr	His	Leu	Asn	Leu	Ser	Tyr	Asn	Pro	Ile	Ser	Thr	Ile				
		275					280					285							
Glu	Ala	Gly	Met	Phe	Ser	Asp	Leu	Ile	Arg	Leu	Gln	Glu	Leu	His	Ile				
	290					295					300								
Val	Gly	Ala	Gln	Leu	Arg	Thr	Ile	Glu	Pro	His	Ser	Phe	Gln	Gly	Leu				
305					310						315				320				
Arg	Phe	Leu	Arg	Val	Leu	Asn	Val	Ser	Gln	Asn	Leu	Leu	Glu	Thr	Leu				
				325					330					335					
Glu	Glu	Asn	Val	Phe	Ser	Ser	Pro	Arg	Ala	Leu	Glu	Val	Leu	Ser	Ile				
			340					345					350						
Asn	Asn	Asn	Pro	Leu	Ala	Cys	Asp	Cys	Arg	Leu	Leu	Trp	Ile	Leu	Gln				
		355					360					365							
Arg	Gln	Pro	Thr	Leu	Gln	Phe	Gly	Gly	Gln	Gln	Pro	Met	Cys	Ala	Gly				
	370					375					380								
Pro	Asp	Thr	Ile	Arg	Glu	Arg	Ser	Phe	Lys	Asp	Phe	His	Ser	Thr	Ala				
385					390					395					400				
Leu	Ser	Phe	Tyr	Phe	Thr	Cys	Lys	Lys	Pro	Lys	Ile	Arg	Glu	Lys	Lys				
				405					410					415					
Leu	Gln	His	Leu	Leu	Val	Asp	Glu	Gly	Gln	Thr	Val	Gln	Leu	Glu	Cys				
			420					425					430						
Ser	Ala	Asp	Gly	Asp	Pro	Gln	Pro	Val	Ile	Ser	Trp	Val	Thr	Pro	Arg				
		435					440					445							
Arg	Arg	Phe	Ile	Thr	Thr	Lys	Ser	Asn	Gly	Arg	Ala	Thr	Val	Leu	Gly				
	450					455					460								
Asp	Gly	Thr	Leu	Glu	Ile	Arg	Phe	Ala	Gln	Asp	Gln	Asp	Ser	Gly	Met				
465					470						475				480				
Tyr	Val	Cys	Ile	Ala	Ser	Asn	Ala	Ala	Gly	Asn	Asp	Thr	Phe	Thr	Ala				
				485					490					495					
Ser	Leu	Thr	Val	Lys	Gly	Phe	Ala	Ser	Asp	Arg	Phe	Leu	Tyr	Ala	Asn				
			500					505					510						

Arg Thr Pro Met Tyr Met Thr Asp Ser Asn Asp Thr Ile Ser Asn Gly
515 520 525

Thr Asn Ala Asn Thr Phe Ser Leu Asp Leu Lys Thr Ile Leu Val Ser
530 535 540

Thr Ala Met Gly Cys Phe Thr Phe Leu Gly Val Val Leu Phe Cys Phe
545 550 555 560

Leu Leu Leu Phe Val Trp Ser Arg Gly Lys Gly Lys His Lys Asn Ser
565 570 575

Ile Asp Leu Glu Tyr Val Pro Arg Lys Asn Ser Gly Ala Val Val Glu
580 585 590

Gly Glu Val Ala Gly Pro Arg Arg Phe Asn Met Lys Met Ile
595 600 605

<210> 19
<211> 1215
<212> DNA
<213> Homo sapiens

<400> 19
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ttcgcccagg ttgtaattga agccaattct tgggtggtcgc taggtatgaa taacctgtt 180
cagatgtcag aagtatatat tataggagca cagcctctct gcagccaact ggcaggactt 240
tctcaaggac agaagaaact gtgccacttg tatcaggacc acatgcagta catcggagaa 300
ggcgcggaaga caggcatcaa agaatgccag tatcaattcc gacatcgaag gtggaactgc 360
agcactgtgg ataacacctc tgtttttggc aggggtgatgc agataggtag ccgcgagacg 420
gccttcacat acgcggtgag cgcagcaggg gtggtgaacg ccatgagccg ggcgtgccgc 480
gagggcgagc tgtccacctg cggctgcagc cgcgcgcgcg gcccgaagga cctgccgcgg 540
gactggctct ggggcggctc cggcgccacc aacaaaaaag gctaccgctc cgccaaggag 600
atcgtgcacg cccgcgaacg aggacgcac cagcgaagg gctcctacga gagtgtcgc 660
atcctcatga acctgcacaa caacgaggcc ggccgcagga cgggtgtacaa cctggctgat 720
gtggcctgca agtgccatgg ggtgtccggc tcatgtagcc tgaagacatg ctggctgcag 780
ctggcagact tccgcaaggt ggggtgatgc ctgaaggaga agtacgacag cgcggcggcc 840
atgcccgtca acagccgggg caagttggta caggtcaaca gccgcttcaa ctcgcccacc 900
acacaagacc tgggtctacat cgaccccagc cctgactact gcgtgcgcaa tgagagcacc 960
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gagctcatgt gctgcggccg tggctacgac cagttcaaga ccgtgcagac ggagcgctgc 1080
cactgcaagt tccactggtg ctgctacgtc aagtgaaga agtgcacgga gatcgtggac 1140
cagtttgtgt gcaagtagtg ggtgccacc agcactcagc cccgctccca ggaccgcgtt 1200
atttatagaa agtac 1215

<210> 20
<211> 380
<212> PRT
<213> Homo sapiens

<400> 20
Leu Gln Lys Ser Ile Gly Ile Leu Ser Pro Gly Val Ala Leu Gly Met
1 5 10 15

Ala Gly Ser Ala Met Ser Ser Lys Phe Phe Leu Val Ala Leu Ala Ile
20 25 30

Phe Phe Ser Phe Ala Gln Val Val Ile Glu Ala Asn Ser Trp Trp Ser
35 40 45

Leu Gly Met Asn Asn Pro Val Gln Met Ser Glu Val Tyr Ile Ile Gly
 50 55 60
 Ala Gln Pro Leu Cys Ser Gln Leu Ala Gly Leu Ser Gln Gly Gln Lys
 65 70 75 80
 Lys Leu Cys His Leu Tyr Gln Asp His Met Gln Tyr Ile Gly Glu Gly
 85 90 95
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 Gly Ser Tyr Glu Ser Ala Arg Ile Leu Met Asn Leu His Asn Asn Glu
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 260 265 270
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 Ser Pro Asp Tyr Cys Val Arg Asn Glu Ser Thr Gly Ser Leu Gly Thr
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 <212> DNA
 <213> Homo sapiens

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<210> 22
 <211> 380
 <212> PRT
 <213> Homo sapiens

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Phe Phe Ser Phe Ala Gln Val Val Ile Glu Ala Asn Ser Trp Trp Ser
      35             40             45

Leu Gly Met Asn Asn Pro Val Gln Met Ser Glu Val Tyr Ile Ile Gly
      50             55             60

Ala Gln Pro Leu Cys Ser Gln Leu Ala Gly Leu Ser Gln Gly Gln Lys
      65             70             75             80

Lys Leu Cys His Leu Tyr Gln Asp His Met Gln Tyr Ile Gly Glu Gly
      85             90             95

Ala Lys Thr Gly Ile Lys Glu Cys Gln Tyr Gln Phe Arg His Arg Arg
      100            105            110

Trp Asn Cys Ser Thr Ala Asp Asn Thr Ser Val Phe Gly Arg Val Met
      115            120            125

Gln Ile Gly Ser Arg Glu Thr Ala Phe Thr His Ala Val Ser Ala Ala
      130            135            140

Gly Val Val Asn Ala Ile Ser Arg Ala Cys Arg Glu Gly Glu Leu Ser
      145            150            155            160

Thr Cys Gly Cys Ser Arg Thr Ala Arg Pro Lys Asp Leu Pro Arg Asp
      165            170            175

Trp Leu Trp Gly Gly Cys Gly Asp Asn Val Glu Tyr Gly Tyr Arg Phe
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Ala Lys Glu Phe Val Asp Ala Arg Glu Arg Glu Lys Asn Phe Ala Lys
      195            200            205

Gly Ser Glu Glu Gln Gly Arg Val Leu Met Asn Leu Gln Asn Asn Glu
      210            215            220

Ala Gly Arg Arg Ala Val Tyr Lys Met Ala Asp Val Ala Cys Lys Cys
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1	5	10	15
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Lys Lys Leu Cys His Leu Tyr 65 70	Gln Asp His Met Gln Tyr 75	Ile Gly Glu 80	
Gly Ala Lys Thr Gly Ile Lys 85	Glu Cys Gln Tyr Gln Phe Arg 90 95	His Arg	
Arg Trp Asn Cys Ser Thr Val Asp 100	Asn Thr Ser Val Phe Gly 105 110	Arg Val	
Met Gln Ile Gly Ser Arg Glu Thr 115 120	Ala Phe Thr Tyr Ala Val 125	Ser Ala	
Ala Gly Val Val Asn Ala Met 130 135	Ser Arg Ala Cys Arg Glu Gly 140	Glu Leu	
Ser Thr Cys Gly Cys Ser Arg Ala 145 150	Ala Arg Pro Lys Asp Leu Pro 155 160	Arg	
Asp Trp Leu Trp Gly Gly Cys Gly 165	Asp Asn Ile Asp Tyr Gly Tyr 170 175	Arg	
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Glu Ala Gly Arg Arg Thr Val Tyr 210 215	Asn Leu Ala Asp Val Ala Cys 220	Lys	
Cys His Gly Val Ser Gly Ser Cys 225 230	Ser Leu Lys Thr Cys Trp Leu 235 240	Gln	
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Pro Ser Pro Asp Tyr Cys Val Arg 290 295	Asn Glu Ser Thr Gly Ser Leu 300	Gly	
Thr Gln Gly Arg Leu Cys Asn Lys 305 310	Thr Ser Glu Gly Met Asp Gly 315 320	Cys	
Glu Leu Met Cys Cys Gly Arg Gly 325	Tyr Asp Gln Phe Lys Thr Val 330 335	Gln	
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Lys Lys Cys Thr Glu Ile Val Asp Gln Phe Val Cys Lys
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<210> 25
 <211> 4213
 <212> DNA
 <213> Homo sapiens

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<210> 26
<211> 1210
<212> PRT
<213> Homo sapiens

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<222> (1185)
<223> Wherein Xaa is any amino acid as defined in the
specification

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Gly Lys Leu Ser Asp Tyr Gly Val Thr Val Pro Cys Ser Thr Asp Phe
 35             40             45

Arg Gly Arg Phe Leu Ser His Val Val Ser Gly Pro Ala Ala Ala Ser
 50             55             60

Ala Gly Ser Met Val Val Asp Thr Pro Pro Thr Leu Pro Arg His Ser
 65             70             75             80

Ser His Leu Arg Val Ala Arg Ser Pro Leu His Pro Gly Gly Thr Leu
 85             90             95

Trp Pro Gly Arg Val Gly Arg His Ser Leu Tyr Phe Asn Val Thr Val
100            105            110

Phe Gly Lys Glu Leu His Leu Arg Leu Arg Pro Asn Arg Arg Leu Val
115            120            125

Val Pro Gly Ser Ser Val Glu Trp Gln Glu Asp Phe Arg Glu Leu Phe
130            135            140

Arg Gln Pro Leu Arg Gln Glu Cys Val Tyr Thr Gly Gly Val Thr Gly
145            150            155            160

Met Pro Gly Ala Ala Val Ala Ile Ser Asn Cys Asp Gly Leu Cys Ala
165            170            175

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 Pro Leu Glu Arg Gly Gln Gln Glu Lys Glu Ala Ser Gly Arg Thr His
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 Val Val Tyr Arg Arg Glu Ala Val Gln Gln Asp Phe Gly Leu Gly Asp
 210 215 220
 Leu Pro Asn Leu Leu Gly Leu Val Gly Asp Gln Leu Gly Asp Thr Glu
 225 230 235 240
 Arg Lys Arg Arg His Ala Lys Pro Gly Ser Tyr Ser Ile Glu Val Leu
 245 250 255
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 260 265 270
 Gln Asn Tyr Val Leu Thr Leu Met Asn Ile Val Ser Val Asp Glu Ile
 275 280 285
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 325 330 335
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 370 375 380
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 420 425 430
 Ser Arg Cys Ser Lys Leu Glu Leu Ser Arg Tyr Leu Pro Ser Tyr Asp
 435 440 445
 Cys Leu Leu Asp Asp Pro Phe Asp Pro Ala Trp Pro Gln Pro Pro Glu
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 465 470 475 480
 Gly Ser Gly Tyr Gln Thr Cys Leu Ala Phe Arg Thr Phe Glu Pro Cys
 485 490 495
 Lys Gln Leu Trp Cys Ser His Pro Asp Asn Pro Tyr Phe Cys Lys Thr
 500 505 510

Lys Lys Gly Pro Pro Leu Asp Gly Thr Glu Cys Ala Pro Gly Lys Trp
 515 520 525
 Cys Phe Lys Gly His Cys Ile Trp Lys Ser Pro Glu Gln Thr Tyr Gly
 530 535 540
 Gln Asp Gly Gly Trp Ser Ser Trp Thr Lys Phe Gly Ser Cys Ser Arg
 545 550 555 560
 Ser Cys Gly Gly Gly Val Arg Ser Arg Ser Arg Ser Cys Asn Asn Pro
 565 570 575
 Ser Pro Ala Tyr Gly Gly Arg Leu Cys Leu Gly Pro Met Phe Glu Tyr
 580 585 590
 Gln Val Cys Asn Ser Glu Glu Cys Pro Gly Thr Tyr Glu Asp Phe Arg
 595 600 605
 Ala Gln Gln Cys Ala Lys Arg Asn Ser Tyr Tyr Val His Gln Asn Ala
 610 615 620
 Lys His Ser Trp Val Pro Tyr Glu Pro Asp Asp Asp Ala Gln Lys Cys
 625 630 635 640
 Glu Leu Ile Cys Gln Ser Ala Asp Thr Gly Asp Val Val Phe Met Asn
 645 650 655
 Gln Val Val His Asp Gly Thr Arg Cys Ser Tyr Arg Asp Pro Tyr Ser
 660 665 670
 Val Cys Ala Arg Gly Glu Cys Val Pro Val Gly Cys Asp Lys Glu Val
 675 680 685
 Gly Ser Met Lys Ala Asp Asp Lys Cys Gly Val Cys Gly Gly Asp Asn
 690 695 700
 Ser His Cys Arg Thr Val Lys Gly Thr Leu Gly Lys Ala Ser Lys Gln
 705 710 715 720
 Ala Gly Ala Leu Lys Leu Val Gln Ile Pro Ala Gly Ala Arg His Ile
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 755 760 765
 Ser Arg Thr Phe Thr Ala Met Gly Leu Glu Trp Glu Asp Ala Val Glu
 770 775 780
 Asp Ala Lys Glu Ser Leu Lys Thr Ser Gly Pro Leu Pro Glu Ala Ile
 785 790 795 800
 Ala Ile Leu Ala Leu Pro Pro Thr Glu Gly Gly Pro Arg Ser Ser Leu
 805 810 815
 Ala Tyr Lys Tyr Val Ile His Glu Asp Leu Leu Pro Leu Ile Gly Ser
 820 825 830
 Asn Asn Val Leu Leu Glu Glu Met Asp Thr Tyr Glu Trp Ala Leu Lys
 835 840 845
 Ser Trp Ala Pro Cys Ser Lys Ala Cys Gly Gly Gly Ile Gln Phe Thr

850	855	860
Lys Tyr Gly Cys Arg	Arg Arg Arg Asp His	His Met Val Gln Arg His
865	870	875 880
Leu Cys Asp His	Lys Lys Arg Pro Lys	Pro Ile Arg Arg Arg Cys Asn
	885	890 895
Gln His Pro Cys Ser	Gln Pro Val Trp Val Thr	Glu Glu Trp Gly Ala
	900	905 910
Cys Ser Arg Ser Cys	Gly Lys Leu Gly Val Gln Thr	Arg Gly Ile Gln
	915	920 925
Cys Leu Leu Pro Leu	Ser Asn Gly Thr His Lys	Val Met Pro Ala Lys
	930	935 940
Ala Cys Ala Gly Asp	Arg Pro Glu Ala Arg	Arg Pro Cys Leu Arg Val
945	950	955 960
Pro Cys Pro Ala Gln	Trp Arg Leu Gly Ala Trp	Ser Gln Cys Ser Ala
	965	970 975
Thr Cys Gly Glu Gly	Ile Gln Gln Arg Gln Val Val	Cys Arg Thr Asn
	980	985 990
Ala Asn Ser Leu Gly	His Cys Glu Gly Asp Arg	Pro Asp Thr Val Gln
	995	1000 1005
Val Cys Ser Leu Pro	Ala Cys Asn Lys Ile Ser Ser	Thr Glu Pro Cys
1010	1015	1020
Thr Gly Asp Arg Ser	Val Phe Cys Gln Met Glu Val	Leu Asp Arg Tyr
1025	1030	1035 1040
Cys Ser Ile Pro Gly	Tyr His Arg Leu Cys Cys Val	Ser Cys Ile Lys
	1045	1050 1055
Lys Ala Ser Gly Pro	Asn Pro Gly Pro Asp Pro Gly	Pro Thr Ser Leu
	1060	1065 1070
Pro Pro Phe Ser Thr	Pro Gly Ser Pro Leu Pro Gly	Pro Gln Asp Pro
	1075	1080 1085
Ala Asp Ala Ala Glu	Pro Pro Gly Lys Pro Thr Gly	Ser Glu Asp His
1090	1095	1100
Gln His Gly Arg Ala	Thr Gln Leu Pro Gly Ala Leu	Asp Thr Ser Ser
1105	1110	1115 1120
Pro Gly Thr Gln His	Pro Phe Ala Pro Glu Thr Pro	Ile Pro Gly Ala
	1125	1130 1135
Ser Trp Ser Ile Ser	Pro Thr Thr Pro Gly Gly Leu	Pro Trp Gly Trp
	1140	1145 1150
Thr Gln Thr Pro Thr	Pro Val Pro Glu Asp Lys Gly Gln	Pro Gly Glu
	1155	1160 1165
Asp Leu Arg His Pro	Gly Thr Ser Leu Pro Ala Ala	Ser Pro Val Thr
1170	1175	1180
Xaa Ala Val Pro Cys	His Pro Thr Gly Thr Phe Thr	Leu Cys Val Leu
1185	1190	1195 1200

Pro Arg Asp Ser Gln Leu Arg Gly His Thr
1205 1210

<210> 27
<211> 1390
<212> DNA
<213> Homo sapiens

<400> 27
cttgagtggc caaggcaaga tgggtcaaag tcaaagtggg ggtcatgggc ttggagctgg 60
aaagaaggat gatagggaca agaaaaagaa atatgaacct cctataccag ctagagtggag 120
gaagaagaag aaaacaaagg gaccagatgc tgccagcaaa ctgccactga tgacacctca 180
cactctgtgc cagttaaaat tattgaaatt agagataatt aaatactgtc ttctcatgaa 240
ggaagaattc attagaaatc aggaacaaat gaaactatta gaaggaaagc aagaggagga 300
aagatcaaaa gtggatgatc tgagggggac ccccatgtca gtagtaacct tgggaagagat 360
tattgatgac aatcatgcca tcatgtctac atctgtgggc tcagagcatc tgtgggctca 420
gagcattctt gtagacaagg atctgctgga acctggctgc tcggtcctgc tcaaccacaa 480
ggttcgtgct gtgatatggg tgctgatgga tgacacggat accctagtca caatgatgaa 540
ggtggaaaag accccccagg agacctgtgt tgatactggg gggttggaca gccaaattca 600
ggaaattaag gaatttgtgg agcttcctct cacacattct gaattattatg aagagatggg 660
tataaagccc cctaagggag tcattcacta tgggtccacct ggcacaggta aaaccttgtt 720
agccaaagca gtagcaaacc acatcttagc cactttcttg caagtgatca gctctgaatt 780
tattcagaaa tacctacatg atgggcccac actcatatgg gaattgtttc tagttgctga 840
agaacatgca ccttccatca tgtttattga tgaaattgat gctattagga caaaaagatg 900
tgactcaaat tctgatagtg agagagaaat tcagcaaata atgctggaaa tgttgaacca 960
gttggtatgga tttgattcaa ggggagatgt gaaagttatc atatccacaa gccgaataga 1020
aactttggat ctagcactta tcagaccagg ctacactgac aggaagctca agttccccct 1080
gcctgatgaa aagactaaga agcacatctt tcagatgcac acaagcagga ttacgctggc 1140
caatgataca atcctggaca actccatcat ggctaaagat gacctctctt gtacagacct 1200
caaggcaatc tgcacagaag ctagtctgat ggccttaaaa gaacatggaa tgaaagtaac 1260
aatgaaaac ttcaaaaaat ctcaagaaaa tgttctttat aaagaacagg aagacacccc 1320
caaggggctc tgtctcggaa gcaagagaaa gaaggggaag gggccagact cattttaaca 1380
accagatatt 1390

<210> 28
<211> 452
<212> PRT
<213> Homo sapiens

<400> 28
Met Gly Gln Ser Gln Ser Gly Gly His Gly Leu Gly Ala Gly Lys Lys
1 5 10 15
Asp Asp Arg Asp Lys Lys Lys Lys Tyr Glu Pro Pro Ile Pro Ala Arg
20 25 30
Val Arg Lys Lys Lys Lys Thr Lys Gly Pro Asp Ala Ala Ser Lys Leu
35 40 45
Pro Leu Met Thr Pro His Thr Leu Cys Gln Leu Lys Leu Leu Lys Leu
50 55 60
Glu Ile Ile Lys Tyr Cys Leu Leu Met Lys Glu Glu Phe Ile Arg Asn
65 70 75 80
Gln Glu Gln Met Lys Leu Leu Glu Gly Lys Gln Glu Glu Glu Arg Ser
85 90 95
Lys Val Asp Asp Leu Arg Gly Thr Pro Met Ser Val Val Thr Leu Glu
100 105 110

Glu Ile Ile Asp Asp Asn His Ala Ile Met Ser Thr Ser Val Gly Ser
 115 120 125
 Glu His Leu Trp Ala Gln Ser Ile Leu Val Asp Lys Asp Leu Leu Glu
 130 135 140
 Pro Gly Cys Ser Val Leu Leu Asn His Lys Val Arg Ala Val Ile Trp
 145 150 155 160
 Val Leu Met Asp Asp Thr Asp Thr Leu Val Thr Met Met Lys Val Glu
 165 170 175
 Lys Thr Pro Gln Glu Thr Cys Val Asp Thr Gly Gly Leu Asp Ser Gln
 180 185 190
 Ile Gln Glu Ile Lys Glu Phe Val Glu Leu Pro Leu Thr His Ser Glu
 195 200 205
 Tyr Tyr Glu Glu Met Gly Ile Lys Pro Pro Lys Gly Val Ile His Tyr
 210 215 220
 Gly Pro Pro Gly Thr Gly Lys Thr Leu Leu Ala Lys Ala Val Ala Asn
 225 230 235 240
 His Ile Leu Ala Thr Phe Leu Gln Val Ile Ser Ser Glu Phe Ile Gln
 245 250 255
 Lys Tyr Leu His Asp Gly Pro Lys Leu Ile Trp Glu Leu Phe Leu Val
 260 265 270
 Ala Glu Glu His Ala Pro Ser Ile Met Phe Ile Asp Glu Ile Asp Ala
 275 280 285
 Ile Arg Thr Lys Arg Cys Asp Ser Asn Ser Asp Ser Glu Arg Glu Ile
 290 295 300
 Gln Gln Ile Met Leu Glu Met Leu Asn Gln Leu Asp Gly Phe Asp Ser
 305 310 315 320
 Arg Gly Asp Val Lys Val Ile Ile Ser Thr Ser Arg Ile Glu Thr Leu
 325 330 335
 Asp Leu Ala Leu Ile Arg Pro Gly Tyr Thr Asp Arg Lys Leu Lys Phe
 340 345 350
 Pro Leu Pro Asp Glu Lys Thr Lys Lys His Ile Phe Gln Met His Thr
 355 360 365
 Ser Arg Ile Thr Leu Ala Asn Asp Thr Ile Leu Asp Asn Ser Ile Met
 370 375 380
 Ala Lys Asp Asp Leu Ser Cys Thr Asp Leu Lys Ala Ile Cys Thr Glu
 385 390 395 400
 Ala Ser Leu Met Ala Leu Lys Glu His Gly Met Lys Val Thr Asn Glu
 405 410 415
 Asn Phe Lys Lys Ser Gln Glu Asn Val Leu Tyr Lys Glu Gln Glu Asp
 420 425 430
 Thr Pro Lys Gly Leu Cys Leu Gly Ser Lys Arg Lys Lys Gly Lys Gly
 435 440 445
 Pro Asp Ser Phe

450

<210> 29
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:Oligonucleotide
primers

<400> 29
ctgcacttca aggacagtta cc 22

<210> 30
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:Oligonucleotide
primers

<400> 30
ctatccatcc acgatgtgcc cagct 25

<210> 31
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:Oligonucleotide
primers

<400> 31
tgacaaggag cttactcttc ca 22

<210> 32
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:Oligonucleotide
primers

<400> 32
ccgttcactc ttgcaaagg 19

<210> 33
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:Oligonucleotide
primers

<400> 33
 tccaagggat tcacaactac ttacacca 28

<210> 34
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:Oligonucleotide primers

<400> 34
 ggcacagttg ctataatttt gg 22

<210> 35
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:Oligonucleotide primers

<400> 35
 ctcttggtgact ccctctatgg 20

<210> 36
 <211> 26
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:Oligonucleotide primers

<400> 36
 ctctcggtgg tgcagctcaa tccttt 26

<210> 37
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:Oligonucleotide primers

<400> 37
 gggcctttac caactctgaa 20

<210> 38
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:Oligonucleotide primers

<400> 38
 gacctcagat gtcctagcca at 22

<210> 39
 <211> 26
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:Oligonucleotide
 primers

<400> 39
 cacctacctg aaaggagagc tgcctg 26

<210> 40
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:Oligonucleotide
 primers

<400> 40
 ccaggaaaca ctcactcaca tt 22

<210> 41
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:Oligonucleotide
 primers

<400> 41
 ccagaggatc cagatgtaca tg 22

<210> 42
 <211> 30
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:Oligonucleotide
 primers

<400> 42
 tcctgtctct catcctctac atcttcacca 30

<210> 43
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:Oligonucleotide

primers

<400> 43
 gggctccaga gaagatgtct ac 22

<210> 44
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:Oligonucleotide
 primers

<400> 44
 ccagaggatc cagatgtaca tg 22

<210> 45
 <211> 27
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:Oligonucleotide
 primers

<400> 45
 tcctctacat cttcaccaag atctcgg 27

<210> 46
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:Oligonucleotide
 primers

<400> 46
 agggctccag agaagatgtc ta 22

<210> 47
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:Oligonucleotide
 primers

<400> 47
 ctggtcaggt acctggatgt ta 22

<210> 48
 <211> 26
 <212> DNA
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Oligonucleotide
 primers

<400> 48
 tccatcaatg aagagcttca tattcg 26

<210> 49
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:Oligonucleotide
 primers

<400> 49
 cagcctttaa gtgatccatc ag 22

<210> 50
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:Oligonucleotide
 primers

<400> 50
 ttgaagaagg cagaaacaca a 21

<210> 51
 <211> 26
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:Oligonucleotide
 primers

<400> 51
 ccgccttcaa gagaaacaaa cgaaag 26

<210> 52
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:Oligonucleotide
 primers

<400> 52
 cgcagctcac agctcattat 20

<210> 53
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:Oligonucleotide
 primers

 <400> 53
 caatatgcct gtgtatgcct tt 22

 <210> 54
 <211> 26
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence:Oligonucleotide
 primers

 <400> 54
 aaaagattgt tccacctgaa acacct 26

 <210> 55
 <211> 22
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence:Oligonucleotide
 primers

 <400> 55
 tccagtaaag gccaatagtc aa 22

 <210> 56
 <211> 22
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence:Oligonucleotide
 primers

 <400> 56
 acagcagtac caacagaagc cc 22

 <210> 57
 <211> 22
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence:Oligonucleotide
 primers

 <400> 57
 tcccacctcc gcagcctcat ca 22

 <210> 58
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Oligonucleotide
primers

<400> 58

atattgacat gcttcagatg cagg

24

<210> 59

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Oligonucleotide
primers

<400> 59

ccaagttctt cctagtggct tt

22

<210> 60

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Oligonucleotide
primers

<400> 60

tttctccttc gccaggttg taattg

26

<210> 61

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Oligonucleotide
primers

<400> 61

atacctagcg accaccaaga at

22